

D0134 NP

Figure 1A

1 CCAATAACAACCAGGGCGTTCACCTCGGATTAGCAAGGTTGAAAAACTATTTAGGT 60
61 GCCCATAAAAGGTCCCCCTTCAGGTACCGGTCCGAAATTCCGGTCAACCCAGGGTCCGA 120
121 TCAATTAAGGGTCTGGGGGTGGCACCTGGCACCTTGAAAATTGCAAGCATTCCAA 180
181 GCTTCATCCGGCTCCAGGGTTGGCCTCTCCAAAAGGCAGGCAGCTTTAACGGGTTCCA 240
241 ACAGAAAGGACCTCCCTGGTCTCCTCAATTCCCTGGCTGGAGTTCTCTCGTGTGT 300
301 GGAAGGATTCAAACCCACACACAGGACCCGCATCCTGGGTGATGAAGTCAGACACGC 360
361 AGCAGCTGGGTGAGTGCTACGCTCAAGATAAGCATCTGTGCCATTGTGGGGACTCCCTGG 420
421 GCTGCTCTGCACCCGGACACTTGCTCTGTCCCCGCCATGTACAACGGGTCTGCTGCCGC 480
1 M Y N G S █ C R 8
481 ATCGAGGGGGACACCATCTCCCAGGTGATGCCGCCGTGCTCATTGTGGCCTTGTGCTG 540
9 I E G D T I S Q V M P P L L I V A F V L 28
541 GCGCACTAGGCAATGGGGTCGCCCTGTGTGGTTCTGCTTCACATGAAGACCTGGAAG 600
29 G A L G N G V A L C G F C F H M K T W K 48
601 CCCAGCACTGTTACCTTTCAATTGGCCGTGGCTGATTTCTCCTTATGATCTGCCCTG 660
49 P S T V Y L F N L A V A D F L L M I C L 68
661 CCTTTTCGGACAGACTATTACCTCAGACGTAGACACTGGCTTGGGACATTCCCTGC 720
69 P F R T D Y Y L R R R H W A F G D I P C 88
721 CGAGTGGGGCTTACGTTGCCATGAACAGGGCCGGAGCATCGTGTCCCTACGGTG 780
89 R V G L F T L A M N R A G S I V F L T V 108
781 GTGGCTGCGGACAGGTATTCAAAGTGGTCCACCCCCCACCACCGGGTGAACACTATCTCC 840
109 V A A D R Y F K V V H P H H A V N T I S 128
841 ACCCGGGTGGCGGCTGGCATCGTCTGCACCCGTGGCCCTGGTCATCCTGGGAACAGTG 900
129 T R V A A G I V C T L W A L V I L G T V 148
901 TATCTTTGCTGGAGAACCATCTCTCGCGTGCAAGAGACGGCCGTCCCTGTGAGAGCTTC 960
149 Y L L L E N H L C V Q E T A V S C E S F 168

D0134 NP

Figure 1B

961	ATCATGGAGTCGGCCAATGGCTGGCATGACATCATGTTCCAGCTGGAGTTCTTTATGCC	1020
169	I M E S A N G W H D <u>I M F Q L E F F M P</u>	188
1021	CTCGGCATCATCTTATTTGCTCCTTCAAGATTGTTGGAGCCTGAGGCCGGAGGCAGCAG	1080
189	<u>L G I I L F S S F K I V W S L R R R Q Q</u>	208
1081	CTGGCCAGACAGGCTCGGATGAAGAAGGCACCCGGTTCATCATGGTGGTGGCAATTGTG	1140
209	L A R Q A R M K K A T R F I M V V A I V	228
1141	TTCATCACATGCTACCTGCCAGCGTGTCTGCTAGACTCTATTCCCTGGACGGTGC	1200
229	<u>F I T C Y L P S V S A R L Y F L W T V P</u>	248
1201	TCGAGTGCTGCGATCCCTCTGTCCATGGGCCCTGCACATAACCCTCAGCTTCACCTAC	1260
249	S S A <u>G D P S V H G A L H I T L S F T Y</u>	268
1261	ATGAACAGCATGCTGGATCCCCTGGTGTATTATTTCAAGCCCCTCCTTCCAAATTG	1320
269	<u>M N S M L D P L V Y Y F S S P S F P K F</u>	288
1321	TACAACAAGCTAAAATCTGCAGTCTGAAACCCAAGCAGCCAGGACACTCAAAACACAA	1380
289	Y N K L K I C S L K P K Q P G H S K T Q	308
1381	AGGCCGGAAGAGATGCCAATTGCAACCTCGGTCGCAGGAGTTGCATCAGTGTGGCAAAA	1440
309	R P E E M P I S N L G R R S C I S V A K	328
1441	GTTTCAAAGCCAGTCTGATGGCAATGGATCCCCACTTGTGAGTGGCACTGAACAAG	1500
329	V S K A S L M G N G I P T C	342
1501	CAGACCAACAACACTGAGGAAGATAGAGTGGTAGCTAGAATTAACTCGTGCTAAGGGGT	1560
1561	CGGGGGCTTGAAAATGCCACCCCCCTTCTTATTGCAAGACGGCTCTGCACATGAAC	1620
1621	TGCATCCTCTCATTCTGCGAAATGAAATTCACACAACATACCTTGGGGAGGTT	1680
1681	CAGTTGATTGAAGTGAGTTGGCTGCATTTCTTATCTGATCACAAATGGCAGGGACAGAA	1740
1741	TGTGCATGGAGTGGAGCATGTGTGTTGGAGGGGGCTAGGAACACTGCACAGCCCTGT	1800
1801	GTAATTTCGTTGTTGTTGAGACAGAGTCTCACTCTGTGTCAGGCTCCAGGCTGGA	1860
1861	GTGCAGTGGCACAGTCTCGGCTCACTGCAACCTCTGCCTCCGGTTCAAGCAATTCTCC	1920
1921	TGCCTCAGCCTCCGAGTAGCTGGATTAGAGGCCAGCAACACACCCGGCTAATT	1980

D0134 NP

21. CCGCCGTTA, CGCTGCCTGAGCTGAC

Figure 1C

1981	TGTATTTAGTAGAGACAGGGTTTGCATGTTGCCAGGCTGGCTCGAGCTCCTGAC	2040
2041	CTCAGGTGATCCGCCTGCCTGGCCTCCAAAGTGGTGGGATCACAGGCGTGAGCCACCG	2100
2101	TGCCCGGCCTCCCCTGTGTCATTTAAATGGCTAACGTAATGGGTATATGTGTTGAATG	2160
2161	GGGCATGTTCACTCTCTAGGGCTATGGGCAGTTAGCAGCATTCTATCCTTGACC	2220
2221	TTAAATCATTCTTATCTCAGAAAACAGAAACCGGGCTCAGTCAATCAATGCTTATTTC	2280
2281	AGGCCGAATGAGGCTTTAGATTGGGATCTATTGATCTATCAATTTCATCTTACATT	2340
2341	TCTTGTACATCTGTACATTTGTCCTAACATGTACATCTGTACGTCTGTCATCATTGTGAC	2400
2401	TTCCTGGTAGCCAAGAAGAACACAACAACAAACATCTGCTCTGACCTCTCAAATCTT	2460
2461	TGTATTCAAAGAAGGTGCTGAGGGATCTGTTCCCTGCCCTGGCTCTCCAGTGGGATG	2520
2521	TGCTGAGTCCAATACAATTGCTTTATAATTGCTTTGAAAAAAAAAAAAAAAG	2580

Figure 2A

P2YR_CHICK	MTEALISAALNGTQPELLAG.G..W.....	AAGNATTKOSLTKTGFQFYYPVTYIL
P2YR_MELGA	MTEALISAALNGTQPELLAG.G..W.....	AAGNASTTKOSLTKTGFQFYYPVTYIL
P2YR_BOVIN	MTEVLWPAVPNGTDATAFLADEGSPWGNSV	TSTAAVASPFKCALTKTGQFYYLPAVYIL
P2YR_HUMAN	MTEVLWPAVPNGTDAAFLAGPGSSWGNSV	ASTAAVSSGFKCALTKTGQFYYLPAVYIL
P2YR_RAT	MTEVPWSAVPNTGTDAAFLAGLSLWNST	ASTAAVSSSPECALTKTGQFYYLPAVYIL
HGPBMY27	-----	MYNGSCCRIEGDTISQVMPPPLIV
HM74_HUMAN	-----	MNRHHIQDHFLEIDKKNCMFRDDFIAKVLPPVGL
GPRV_HUMAN	-----	MPFPNCASA.PSTVVATAVGVLGL
P2YR_CHICK	VFITGFLGNSVAIWMFVPHMRPWWSGISVYMFNLALADFLYVLTLPALIFYFNKTDWIFG	
P2YR_MELGA	VFITGFLGNSVAIWMFVPHMRPWWSGISVYMFNLALADFLYVLTLPALIFYFNKTDWIFG	
P2YR_BOVIN	VFIIGFLGNSVAIWMFVPHMKPWWSGISVYMFNLALADFLYVLTLPALIFYFNKTDWIFG	
P2YR_HUMAN	VFIIGFLGNSVAIWMFVPHMKPWWSGISVYMFNLALADFLYVLTLPALIFYFNKTDWIFG	
P2YR_RAT	VFIIGFLGNSVAIWMFVPHMKPWWSGISVYMFNLALADFLYVLTLPALIFYFNKTDWIFG	
HGPBMY27	AFVFGALGNGVALCGFCFHMKTWKPSITVYLFNLAVADFLLMICLPFRTDYYLRRRHWA	FG
HM74_HUMAN	EFIFGLLGNGLALWIFCPHIKSWKSSRLFLFNLAVADFLLLCLPFWMDYYVRKSDWNFG	
GPRV_HUMAN	ECGZGLLGNNAVALWTIIFRVRVWKPYAVYJLNLAADLLAACLPLAAEYLSLQAWHLG	
P2YR_CHICK	DVMCKLQRFIFHVNLGYGSILFLTCISVHRYTGVVHPLKSLGRLKKNA	VYVSSLVWA
P2YR_MELGA	DVMCKLQRFIFHVNLGYGSILFLTCISVHRYTGVVHPLKSLGRLKKNA	VYVSSLVWA
P2YR_BOVIN	DAMCKLQRFIFHVNLGYGSILFLTCISAHRYSGVYVPLKSLGRLKKNA	VYISVLVWL
P2YR_HUMAN	DAMCKLQRFIFHVNLGYGSILFLTCISAHRYSGVYVPLKSLGRLKKNA	VYISVLVWL
P2YR_RAT	DVMCKLQRFIFHVNLGYGSILFLTCISAHRYSGVYVPLKSLGRLKKNA	VYISVLVWL
HGPBMY27	DIPCRVGLFTLAMNRAGSIVFLTVMAADRYFKVVFHHAMNTISTEVAAAGIVCTEWAD	VI
HM74_HUMAN	DIPCRVLVLFMFAAMNRQGSIIFLTVVAADRYFRVVFHHALNQISNWTAAAIISCLLWGT	TV
GPRV_HUMAN	RVGWALRFIDJSRSVGMFLAALADRYLRVHPRLKVNLLSPQAAGVSGLVWL	MV
P2YR_CHICK	AVIAPILFYSGTGVRENKTTITCYDTTADEYLRSYFVYSMCTTVFMFCIPFLVILGCYGLI	
P2YR_MELGA	AVIAPILFYSGTGVRENKTTITCYDTTADEYLRSYFVYSMCTTVFMFCIPFLVILGCYGLI	
P2YR_BOVIN	VGISPILFYSGTGVRENKTTITCYDTTSDEYLRSYFVYSMCTTVAMFCVPLVILGCYGLI	
P2YR_HUMAN	VAVISPILFYSGTGVRENKTTITCYDTTSDEYLRSYFVYSMCTTVAMFCVPLVILGCYGLI	
P2YR_RAT	VAVISPILFYSGTGVRENKTTITCYDTTSDEYLRSYFVYSMCTTVAMFCVPLVILGCYGLI	
HGPBMY27	LGTVYLLLENHL.CVQETAESCESFI..MESANG..WHDIMFQLEFFMPLGIIIFCSFSKI	
HM74_HUMAN	GLTVHLLKKKLL.QQNGPANVCISF..ICHTFR..WHEAMFILEFLPLGIIIFCSFSARI	
GPRV_HUMAN	ALTCPGLLISEA.AQNSTR..CHSFYSRADGSFSITWQEALSCLQFVLPFGLIVFCNAGI	
P2YR_CHICK	VKAL..IYKDDLDNSPLRRKSIYLVIIVLTVFAVSYLPLFHVMT	IINLRARLDFQTPEMC
P2YR_MELGA	VKAL..IYKDDLDNSPLRRKSIYLVIIVLTVFAVSYLPLFHVMT	IINLRARLDFQTPEMC
P2YR_BOVIN	VRAL..IYKDDLDNSPLRRKSIYLVIIVLTVFAVSYLPLFHVMT	IINLRARLDFQTPEMC
P2YR_HUMAN	VRAL..IYKDDLDNSPLRRKSIYLVIIVLTVFAVSYLPLFHVMT	IINLRARLDFQTPEMC
P2YR_RAT	VRAL..IYKDDLDNSPLRRKSIYLVIIVLTVFAVSYLPLFHVMT	IINLRARLDFQTPEMC
HGPBMY27	VWSLRRR.QQLARQARMKKATRFIMVVAIVFITCYLP.SVSARTYFLWTVPSSA...CD.	
HM74_HUMAN	WWSLRQR..QMDRHAKIKRAITFIMVVAIVFVTCELP.SVVRTRIFWLLHTSGTQNCEV	
GPRV_HUMAN	IRALQKRLREPEKOPKQRAQALVTLVWVLFALCELP.CFLJARV.LMHIFQNLG..SCRA	
P2YR_CHICK	NDKVYATYQVTRGLASLNCSVDPILYFLAGDTFRRRLSRATRKSSRSEPNVQSKSEEMT	
P2YR_MELGA	NDKVYATYQVTRGLASLNCSVDPILYFLAGDTFRRRLSRATRKSSRSEPNVQSKSEEMT	
P2YR_BOVIN	NDRVYATYQVTRGLASLNCSVDPILYFLAGDTFRRRLSRATRKASRRSEANLQSKSEEMT	
P2YR_HUMAN	NDRVYATYQVTRGLASLNCSVDPILYFLAGDTFRRRLSRATRKASRRSEANLQSKSEEMT	
P2YR_RAT	NDRVYATYQVTRGLASLNCSVDPILYFLAGDTFRRRLSRATRKASRRSEANLQSKSEEMT	
HGPBMY27	.PSVHGALHITLSFTYMSMLDPLVYVFSSPSFPYFYNKLKICSLKPK.QPGHSKTIQRPE	
HM74_HUMAN	YRSVDAFFITLSFTYMSMLDPLVYVFSSPSFPNSTLINRCLQRK.MTGEPDNNRST	
GPRV_HUMAN	LCAVAHTSDVTGSLTYLHSVVPVYCFSSPTFRSSYRVFH.IILRGKGQAAEPPDFNPR	
P2YR_CHICK	LNILTEYKQNGDTSL	
P2YR_MELGA	LNILTEYKQNGDTSL	
P2YR_BOVIN	LNILSEFKQNGDTSL	
P2YR_HUMAN	LNILPEFKQNGDTSL	
P2YR_RAT	LNILSEFKQNGDTSL	
HGPBMY27	EMPTSNLGRRSCISVAKVSKASLMGN.GIPTC	
HM74_HUMAN	SVELTGDPNKT....RGAPEALMANSGEPWSPSYLGPTSNNHSKKGHCHQEPALEKQL	
GPRV_HUMAN	DSYS-----	

D0134 NP

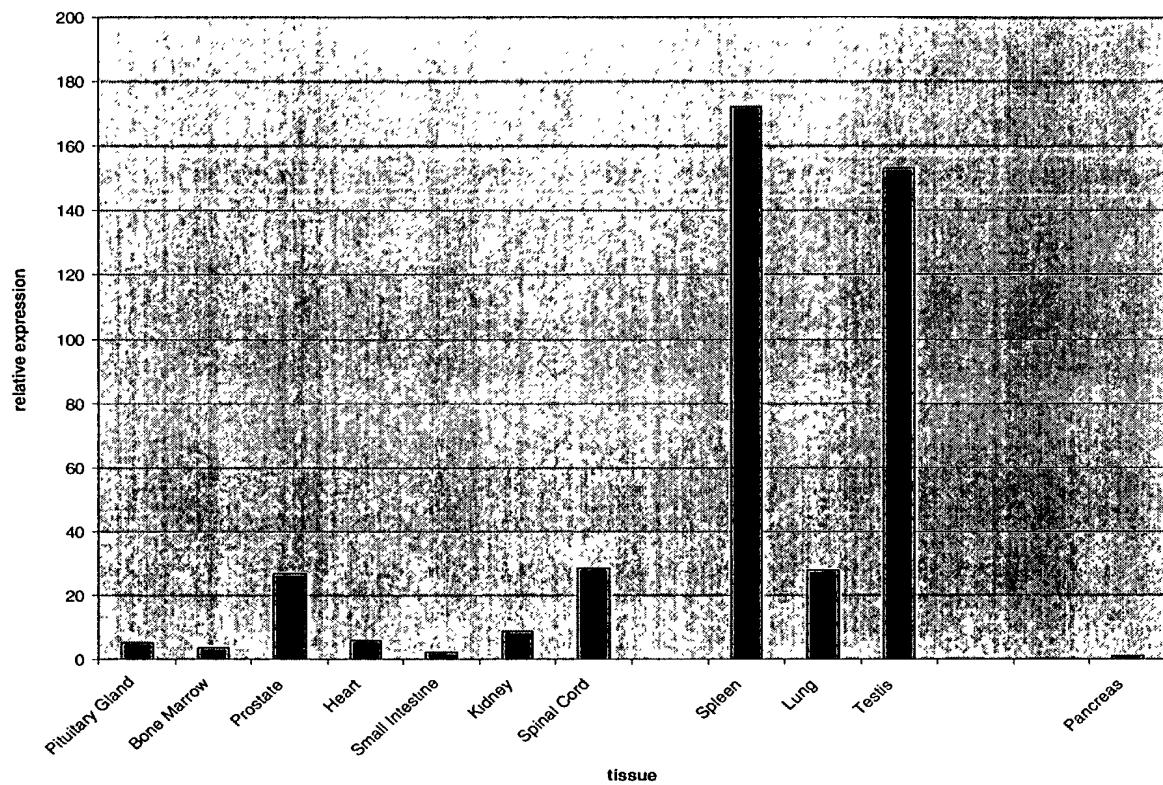
Figure 2B

P2YR_CHICK ~~~~~
P2YR_MELGA ~~~~~
P2YR_BOVIN ~~~~~
P2YR_HUMAN ~~~~~
P2YR_RAT ~~~~~
HGPRBMY27 ~~~~~
HM74_HUMAN GCCIE
GPRV_HUMAN ~~~~~

D0134 NP

2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 209 210 211 212 213 214 215 216 217 218 219 219 220 221 222 223 224 225 226 227 228 229 229 230 231 232 233 234 235 236 237 238 239 239 240 241 242 243 244 245 246 247 248 249 249 250 251 252 253 254 255 256 257 258 259 259 260 261 262 263 264 265 266 267 268 269 269 270 271 272 273 274 275 276 277 278 279 279 280 281 282 283 284 285 286 287 288 289 289 290 291 292 293 294 295 296 297 298 299 299 300 301 302 303 304 305 306 307 308 309 309 310 311 312 313 314 315 316 317 318 319 319 320 321 322 323 324 325 326 327 328 329 329 330 331 332 333 334 335 336 337 338 339 339 340 341 342 343 344 345 346 347 348 349 349 350 351 352 353 354 355 356 357 358 359 359 360 361 362 363 364 365 366 367 368 369 369 370 371 372 373 374 375 376 377 378 379 379 380 381 382 383 384 385 386 387 388 389 389 390 391 392 393 394 395 396 397 398 399 399 400 401 402 403 404 405 406 407 408 409 409 410 411 412 413 414 415 416 416 417 418 419 419 420 421 422 423 424 425 426 427 428 429 429 430 431 432 433 434 435 436 437 438 439 439 440 441 442 443 444 445 446 447 448 449 449 450 451 452 453 454 455 456 457 458 459 459 460 461 462 463 464 465 466 467 468 469 469 470 471 472 473 474 475 476 477 478 479 479 480 481 482 483 484 485 486 487 488 489 489 490 491 492 493 494 495 496 497 498 499 499 500 501 502 503 504 505 506 507 508 509 509 510 511 512 513 514 515 516 516 517 518 519 519 520 521 522 523 524 525 526 527 528 529 529 530 531 532 533 534 535 536 537 538 539 539 540 541 542 543 544 545 546 547 548 549 549 550 551 552 553 554 555 556 557 558 559 559 560 561 562 563 564 565 566 567 568 569 569 570 571 572 573 574 575 576 577 578 579 579 580 581 582 583 584 585 586 587 588 589 589 590 591 592 593 594 595 596 597 598 599 599 600 601 602 603 604 605 606 607 608 609 609 610 611 612 613 614 615 616 616 617 618 619 619 620 621 622 623 624 625 626 627 628 629 629 630 631 632 633 634 635 636 637 638 639 639 640 641 642 643 644 645 646 647 648 649 649 650 651 652 653 654 655 656 657 658 659 659 660 661 662 663 664 665 666 667 668 669 669 670 671 672 673 674 675 676 677 678 679 679 680 681 682 683 684 685 686 687 688 689 689 690 691 692 693 694 695 696 697 698 699 699 700 701 702 703 704 705 706 707 708 709 709 710 711 712 713 714 715 716 716 717 718 719 719 720 721 722 723 724 725 726 727 728 729 729 730 731 732 733 734 735 736 737 738 739 739 740 741 742 743 744 745 746 747 748 749 749 750 751 752 753 754 755 756 757 758 759 759 760 761 762 763 764 765 766 767 768 769 769 770 771 772 773 774 775 776 777 778 779 779 780 781 782 783 784 785 786 787 788 789 789 790 791 792 793 794 795 796 797 798 799 799 800 801 802 803 804 805 806 807 808 809 809 810 811 812 813 814 815 816 816 817 818 819 819 820 821 822 823 824 825 826 827 828 829 829 830 831 832 833 834 835 836 837 838 839 839 840 841 842 843 844 845 846 847 848 849 849 850 851 852 853 854 855 856 857 858 859 859 860 861 862 863 864 865 866 867 868 869 869 870 871 872 873 874 875 876 877 878 879 879 880 881 882 883 884 885 886 887 888 889 889 890 891 892 893 894 895 896 897 898 899 899 900 901 902 903 904 905 906 907 908 909 909 910 911 912 913 914 915 916 916 917 918 919 919 920 921 922 923 924 925 926 927 928 929 929 930 931 932 933 934 935 936 937 938 939 939 940 941 942 943 944 945 946 947 948 949 949 950 951 952 953 954 955 956 957 958 959 959 960 961 962 963 964 965 966 967 968 969 969 970 971 972 973 974 975 976 977 978 979 979 980 981 982 983 984 985 986 987 988 989 989 990 991 992 993 994 995 996 997 998 999 999 1000

Figure 3

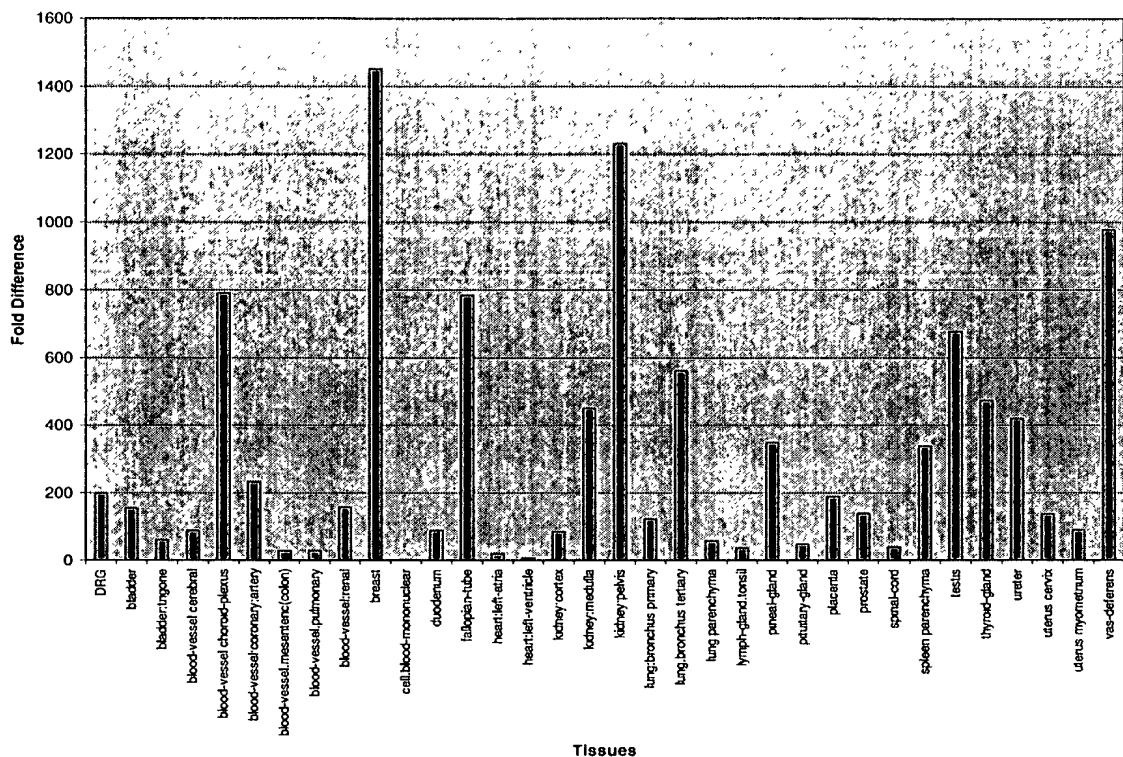
Figure 4

此即所謂「五經」。《周易》、《詩經》、《書經》、《禮記》、《春秋》。

D0134 NP

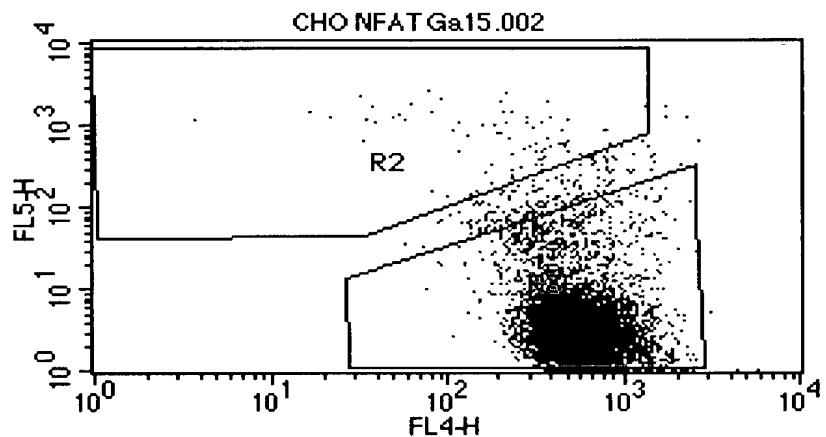
Figure 5.

<u>Protein</u>	<u>SWISS-PROT ID</u>	<u>Identities</u>	<u>Similarities</u>
chicken P2Y purinoceptor 1 (ATP RECEPTOR) protein	P34996	28.9%	39.4%
turkey P2Y purinoceptor 1 (ATP RECEPTOR) protein	P49652	28.9%	39.4%
bovine P2Y purinoceptor 1 (ATP RECEPTOR) protein	P48042	28.7%	39.8%
human P2Y purinoceptor 1 (ATP RECEPTOR) protein	P47900	28.7%	39.5%
rat P2Y purinoceptor 1 (ATP RECEPTOR) protein	P49651	28.7%	39.8%
human G protein-coupled receptor, HM74 protein	P49019	53.6%	61.0%
human G protein-coupled receptor, GPR31 protein	O00270	33.0%	43.6%

Figure 6

D0134 NP

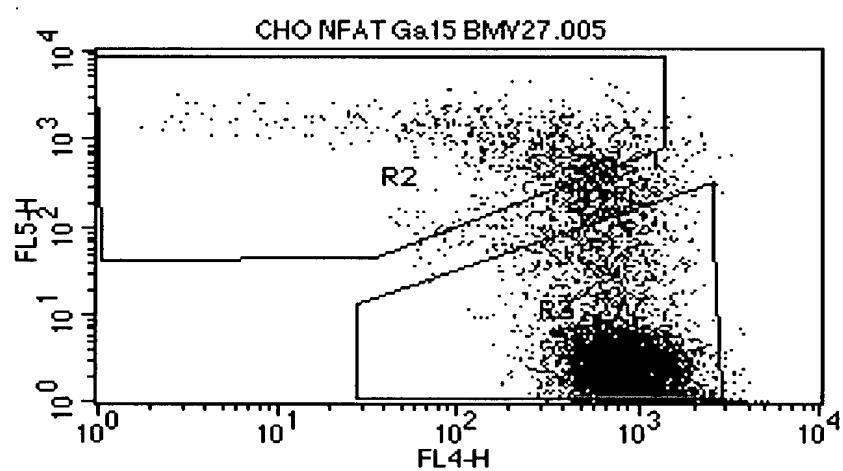
Figure 7



D0134 NP

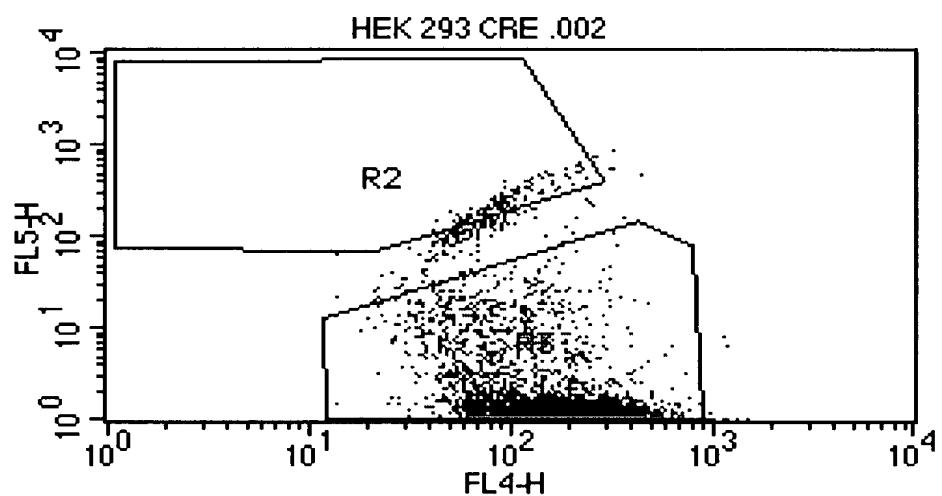
2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017

Figure 8



D0134 NP

Figure 9



D0134 NP

2010-07-20 10:23:45 2010-07-20 10:23:45 2010-07-20 10:23:45 2010-07-20 10:23:45

Figure 10

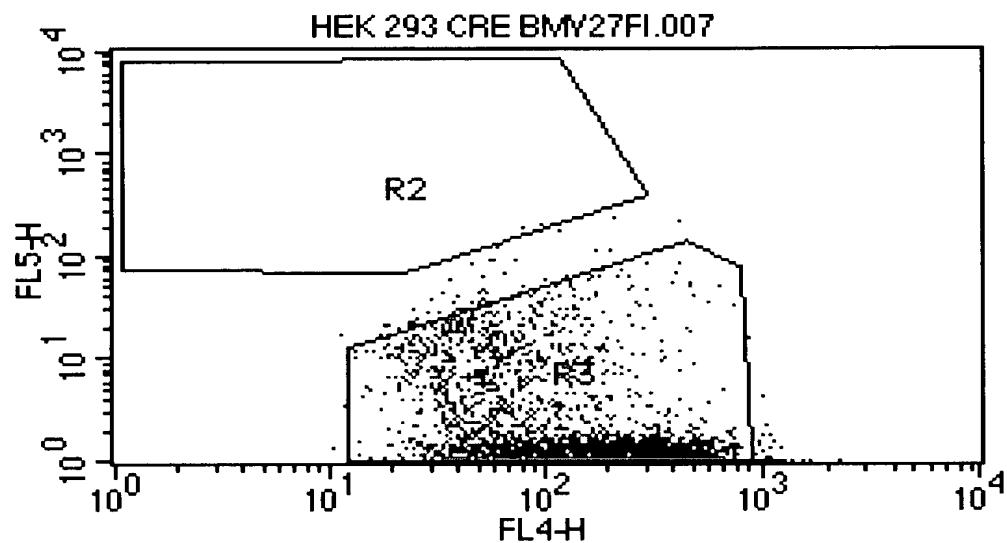
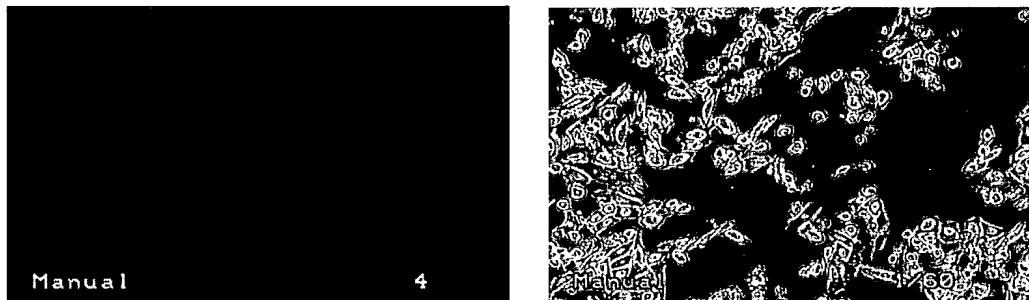
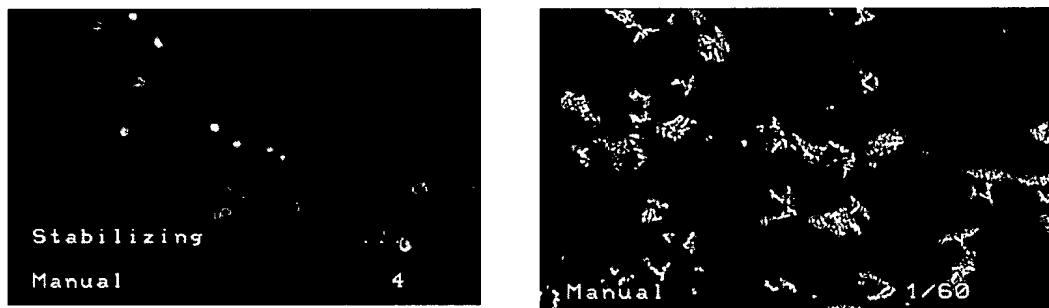


Figure 11

Cho NFAT Ga15 Control (Fluorescent vs. Bright Field)



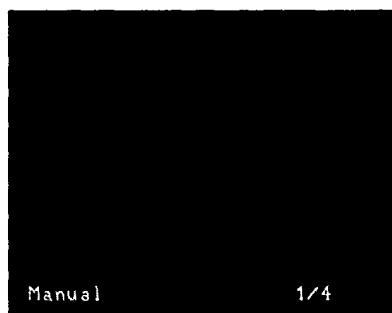
Cho NFAT Ga15 BMY27 (Fluorescent vs. Bright Field)



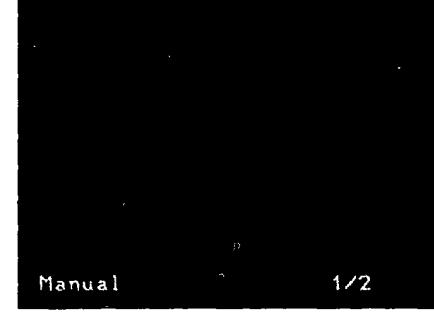
D0134 NP

Figure 12

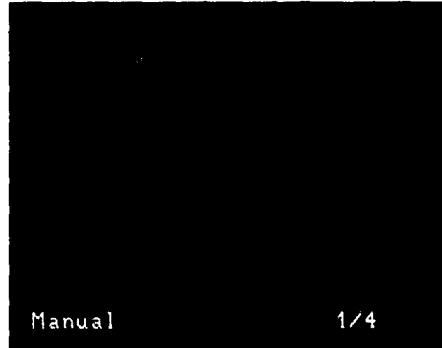
a. Cho NFAT Ga15



b. Cho NFAT Ga15 + T/P



c. Cho NFAT Ga15 oGPCR-Intermediate



d. Cho NFAT Ga15 oGPCR High

